

REMARKS

In the Office Action, the Examiner rejected Claims 1-6 and 8-14 under 35 U.S.C. 102(e) as being fully anticipated by U.S. patent publication no. 2004/0111708 (Calder, et al.). The Examiner objected to Claim 7 as being dependent from a rejected base claim, and indicated that Claim 7 would be allowable if appropriately rewritten. Claims 15-24 were withdrawn from further consideration because of an earlier Restriction requirement. The Examiner also objected to the Abstract because of the phraseology used therein.

Claim 7 is being rewritten in independent form including the limitations of Claims 1 and 6. It is believed that this places Claim 7 in condition for allowance without further argument, and the Examiner is respectfully requested to reconsider and to withdraw the objection to Claim 7 and to allow this claim.

The Abstract is being amended to address the Examiner's objection. Specifically, in line 2 of the Abstract, "comprises" is being changed to "includes." In view of this amendment, the Examiner is also asked to reconsider and to withdraw the objection to the Abstract.

In addition, independent Claims 1, 8 and 12 are being amended to better define the subject matters of these claims.

For the reasons discussed below, Claims 1-6 and 8-14 patentably distinguish over the prior art and are allowable. The Examiner is thus requested to reconsider and to withdraw the rejection of Claims 1-6 and 8-14 under 35 U.S.C. 102, and to allow these claims.

The present invention relates to flexible performance multi-predictor that solves the problem of providing accurate future behavior predictions for adaptive reconfiguration systems. As explained in the present application, adaptive computer systems attempt to improve performance and/or reduce power consumption by periodically reconfiguring the system according to the current resource requirements and/or characteristics of the running workload. The purpose of the reconfiguration is to exploit the variability of behavior in a running workload to improve performance or to reduce power.

A common way to assess workload characteristics is through hardware performance counters. In order to reconfigure effectively a computer system, though, reconfiguration decisions should be based on future rather than past behavior.

The present invention does this. This invention thus supports adaptive reconfiguration computer systems by providing a mechanism to determine, through prediction, expected changes in the workload characteristics. This is done, more specifically, by directly tracking one performance metric of an adaptive computer system, and using that one metric to make predictions along one or more other performance metrics.

Calder, et al. discloses a procedure for analyzing a computer program by finding similar sections of execution in the program. In this procedure, computer program code is executed over several intervals, and a statistic is tracked during this execution. This tracked statistic is then used to identify behavior of the computer program over each execution interval. At least one identified behavior of one execution interval is compared to an identified behavior of another execution interval to find intervals that are similar to each other.

In Calder, et al, paragraphs 206 and 207, which were specifically cited by the Examiner, refer to future predictions. It appears, though, that these predictions relate to whether one code section would operate similar to another code section.

There is, thus, a very important difference between the instant invention and Calder, et al. The present invention provides a prediction about how a target metric associated with the execution of a task on a computer system, while Calder, et al. is directed to looking for program code sections that similar to each other. While the system of the present invention involves, and the system of Calder, et al. may involve, future predictions, what these two systems predict is very different. Whether two program code sections will operate similarly, does not, by itself, predict how either of those code sections will operate.

Independent Claims 1, 8 and 12, as presented herewith, describe the above-discussed feature of the present invention. In particular, each of these claims describes the feature that the target metric, for which a predicted future value is obtained, is associated with an execution of a task on a computer system.

The other references of record have been reviewed, and these other references, whether considered individually or in combination, also do not disclose or suggest the subject matters of Claims 1, 8 and 12.

Because of the above-discussed differences between Claims 1, 8 and 12 and the prior art, and because of the advantages associated with those differences, these claims patentably distinguish over the prior art and are allowable. Claims 2-6 are dependent from, and are allowable with, Claim 1. Likewise, Claims 9-11 are dependent from Claim 8 and are allowable therewith; and Claims 13 and 14 are dependent from, and are allowable with, Claim

12. The Examiner is, accordingly, respectfully asked to reconsider and to withdraw the rejection of Claims 1-6 and 8-14 under 35 U.S.C. 102, and to allow these claims.

In light of the above-discussion, the Examiner is asked to reconsider and to withdraw the objection to the Abstract and the objection to Claim 7, and to allow Claim 7. The Examiner is also requested to reconsider and to withdraw the rejection of Claims 1-6 and 8-14 under 35 U.S.C. 102, and to allow these claims. If the Examiner believes that a telephone conference with Applicants' Attorneys would be advantageous to the disposition of this case, the Examiner is asked to telephone the undersigned.

Respectfully Submitted,

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